2001 IPM BASELINE SURVEY OF SCHOOL DISTRICTS

Prepared for
California Department of Pesticide Regulation
California Environmental Protection Agency
Sacramento, California

Prepared by
Dennis H. Tootelian, Ph.D.
Professor of Marketing
College of Business Administration
California State University, Sacramento
Sacramento, California

OCTOBER 2001

Table of Contents

Table of Contents i

Executive Summary ii

About the Author v

Summary Report of Findings 1

Methodology for the Study 2

- Population for the Study 2
- Research Design 2
- Questionnaire Design 2
- Caveats 2

Findings of the Study 3

- Pest Management Records and Inquiries 3
- Perceived Seriousness of Pest Problems 3
- Treatment Activities for Ants 4
- Treatment Activities for Weeds 5
- Use of Pest Control Businesses 5
- Satisfaction With Current Pest Management Practices 5
- Perceived Value of Resources and Desired Method of Communication 6

Summary and Conclusions 7

Table One: Pest Management Records and Inquiries 9

Table Two: Perceived Seriousness of Pest Problems 10

Table Three: Treatment Activities for Ants 13

Table Four: Treatment Activities for Weeds 15

Table Five: Use of Pest Control Businesses 17

Table Six: Satisfaction With Current Pest Management Practices 18

Table Seven: Perceived Value of Resources and Desired Method of Communication 19

Appendix: Questionnaire Used for the Survey 22

2001 IPM BASELINE SURVEY OF SCHOOL DISTRICTS

EXECUTIVE SUMMARY

In October 2000, the California Department of Pesticide Regulation (DPR) retained Dennis H. Tootelian, Ph.D. to assist in developing and conducting a baseline survey of school districts in California. This was in response to the Healthy Schools Act (AB 2260) and its mandate to support voluntary integrated pest management (IPM) programs in California schools.

The overall project consisted of two phases. Phase One focused on developing a list of individuals in school districts who were responsible for pest management programs. A telephone survey was conducted in November 2000 to identify the names, titles, addresses, and telephone numbers of those individuals. Names that were obtained were then used as the population for this baseline survey.

The purposes of the Phase Two study were to obtain information on various aspects of district pest management policies and practices, and to identify resources districts might need for implementing IPM. The information obtained from this survey will assist DPR in developing technical resources to help school districts comply with the law and improve pest management practices. Baseline questions were also included to measure future IPM adoption by the school districts.

The specific issues under study included:

- What records do school districts keep on pest management activities, and to what extent do they receive inquiries about pest management from the community?
- How serious a problem do school districts consider selected pests to be?
- What treatment activities do school districts use for ants, and how effective did they consider those activities to be?
- What treatment activities do school districts use for weeds, and how effective do they consider those activities to be?
- Do school districts use pest control businesses, and how do they contract with them for services?
- Overall, how effective do school districts consider their current pest management policies and practices to be?
- Overall, how satisfied are school districts with their current pest management policies and practices?

- How useful do school districts consider possible resources being considered by DPR to be in improving their pest management systems, and how would districts prefer to have DPR communicate with them?

Methodology for the Study

The methodology for the survey conformed to generally accepted research practices. Adjustments in the methodology needed to achieve normal time and cost constraints were not considered significant.

Population for the Study

The population for the study was defined to be the 1,003 school districts within California. As previously indicated, all school districts within the state were contacted to identify the person most responsible for pest management. From this, a database was created which had the person's name, title, mailing address, and telephone number. All members of the population were included in this baseline survey.

Research Design

Given the nature of the study, a mail questionnaire was considered to be the most appropriate method of data collection. This approach allowed DPR to reach respondents statewide, and to do so at a reasonable cost. The mail survey also was a very suitable means to access a group of individuals who might not have time to immediately answer questions over the telephone.

Questionnaire Design

The questionnaire consisted of 24 questions, some of which contained multiple parts. Questions generally focused on the issues identified in the INTRODUCTION section of this Summary Report. The questionnaire was developed jointly by the consultant and DPR, and approved by DPR before being used. Included with the questionnaire was a self-addressed, postage-paid business reply envelope. These were addressed such that they would be returned directly to the College of Business Administration at California State University, Sacramento. Respondents were given approximately one month to respond.

Caveats

The results of any research should be used with caution and at the reader's own discretion. Every study, no matter how well constructed, contains the possibility of some degree of error. Accordingly, the reader assumes sole responsibility for the use of this information.

Summary and Conclusions

Of the 1,003 questionnaires mailed, three were returned with incorrect or otherwise no longer valid addresses. This reduced the effective mailing to 1,000 school districts. By the closure date for receiving responses, a total of 394 completed questionnaires were returned. This resulted in a 39.4% response rate on the effective mailout. (For mailed surveys, a 25.0% response rate is considered very good.)

Based on the findings, a number of conclusions appear to be warranted. These are provided below in list form for emphasis.

- Most districts keep records of pest treatments they use. However, the great majority do not keep records of pest sightings, and even fewer keep records of the results of pest monitoring. This appears to be an area in which convenient recordkeeping systems would be beneficial. While districts do not appear to receive many inquiries from the community concerning pest issues, they may need to be prepared for them in the future.

- While the majority of districts have lists of approved pesticides, a large percentage (40.2%) do not. Having such a list would seem to be essential to ensuring that proper and least-toxic treatments are used to manage pests.

- Generally, districts consider weeds and gophers, and to a lesser extent, ants and yellowjackets/bees, to pose the most serious pest problems. However, there were differences among districts as to which pests posed the most serious problems for them. Accordingly, while DPR may give special emphasis in its resource materials to the pests identified above, it may need to provide resources for managing all pests included in this study. Furthermore, while some pests were considered to pose less serious problems, this does not imply that districts have no problems with them. It may be that respondents simply do not feel that these are serious matters.

- The great majority of districts have treated for ants within the last two years. Treatment tends to occur when ants are first noticed, and the most common and preferred control mechanisms are ant baits and aerosol insecticide sprays. Treatments are typically administered by outside contractors, and to a lesser extent by custodians. Generally, districts consider their current ant control methods to be somewhat or very effective. This may explain why they do not consider ants to be an especially serious pest problem. Nevertheless, because so many districts treat for ants, DPR should provide resources for controlling this pest.

- Nearly all of the districts have treated for weeds within the last two years. The most common areas for weeds are fence rows, athletic fields/playgrounds, and landscaping. Districts are divided as to when they treat for weeds. Some do so when weeds exceed some pre-established threshold, at regular intervals, or when first noticed. The most frequently used methods for treating for weeds are spot treatment with herbicides and physical controls (e.g., hand pulling, cultivating, mowing). The preferred method seems to be spot treatment with herbicides, and to a much lesser extent, broadcast treatment with herbicides. Generally, districts consider their current weed control methods to be somewhat or very effective. The fact that the vast majority of districts experience weed control problems may explain why they consider weeds to be a serious pest problem even though they

are satisfied with their current treatment methods. Because so many districts do treat for weeds, and consider it a serious problem, DPR should provide resources for controlling this pest.

- Most districts hire outside pest control businesses. Contract arrangements vary considerably, with the most common being to contract for all pest management or on an as-needed basis. Since districts do contract for these services, DPR should include resources for working effectively with PCOs.

- Most districts consider their current pest management policies and practices to be very to somewhat effective, and are somewhat or very satisfied with them. Accordingly, if DPR is to be successful with encouraging school districts to adopt an IPM program, it will need to demonstrate how the program will enhance or improve upon current practices.

- All of the resources DPR plans to make available to districts to improve their current pest management systems are considered very to somewhat useful. DPR may want to focus its attention first on those that received the highest ratings: information on preventing pest problems, information on least-toxic pest management practices, information on pest management practices at other schools, and lists of products/tools for least-toxic pest management programs.

Overall, it appears that districts believe they have somewhat to very serious problems with several pests. While they generally consider their current pest management policies and practices effective, and are satisfied with them, the districts seem to be receptive to the resources DPR is considering developing for them.

ABOUT THE AUTHOR

Dr. Dennis Tootelian is a Professor of Marketing and Director of the Center for Small Business in the College of Business Administration at California State University, Sacramento (CSUS). He has published approximately one hundred articles dealing with all facets of business, and has co-authored six texts on marketing and small business management. Results of some of his research and writing have appeared in *The Congressional Record*, *The Wall Street Journal*, *Forbes*, *The Kiplinger Report*, *USA Today*, and *The National Enquirer*. Dr. Tootelian has worked in a consulting capacity with numerous state governmental agencies, Fortune 500 companies, and professional and trade associations. He has considerable experience in survey research and strategic planning, and specifically in working with State agencies.

2001 IPM BASELINE SURVEY OF SCHOOL DISTRICTS

SUMMARY REPORT OF FINDINGS

In October 2000, the California Department of Pesticide Regulation (DPR) retained Dennis H. Tootelian, Ph.D. to assist in developing and conducting a baseline survey of school districts in California. This was in response to the Healthy Schools Act (AB 2260) and its mandate to support voluntary integrated pest management (IPM) programs in California schools.

The overall project consisted of two phases. Phase One focused on developing a list of individuals in school districts who were responsible for pest management programs. A telephone survey was conducted in November 2000 to identify the names, titles, addresses, and telephone numbers of those individuals. Names that were obtained were then used as the population for this baseline survey.

The purposes of the Phase Two study were to obtain information on various aspects of district pest management policies and practices, and to identify resources districts might need for implementing IPM. The information obtained from this survey will assist DPR in developing technical resources to help school districts comply with the law and improve pest management practices. Baseline questions were also included to measure future IPM adoption by the school districts.

The specific issues under study included:

- What records do school districts keep on pest management activities, and to what extent do they receive inquiries about pest management from the community?
- How serious a problem do school districts consider selected pests to be and which pests do they consider problems?
- What treatment activities do school districts use for ants, and how effective did they consider those activities to be?
- What treatment activities do school districts use for weeds, and how effective do they consider those activities to be?
- Do school districts use pest control businesses, and how do they contract with them for services?
- Overall, how effective do school districts consider their current pest management policies and practices to be?
- Overall, how satisfied are school districts with their current pest management policies and practices?
- How useful do school districts consider possible resources being considered by DPR to be in improving their pest management systems, and how would districts prefer to have DPR communicate with them?

Methodology for the Study

The methodology for the survey conformed to generally accepted research practices. Adjustments in the methodology needed to achieve normal time and cost constraints were not considered significant.

Population for the Study

The population for the study was defined to be the 1,003 school districts within California. As previously indicated, all school districts within the state were contacted to identify the person most responsible for pest management. From this, a database was created which had the person's name, title, mailing address, and telephone number. All members of the population were included in this baseline survey.

One thousand school districts responded to the Phase One telephone survey. For the few who did not, the district's name was used instead of an individual pest management coordinator.

Research Design

Given the nature of the study, a mail questionnaire was considered to be the most appropriate method of data collection. This approach allowed DPR to reach respondents statewide, and to do so at a reasonable cost. The mail survey also was a very suitable means to access a group of individuals who might not have time to immediately answer questions over the telephone. Furthermore, a mail survey could ensure respondent confidentiality, which may yield more validity to responses. Finally, a mail survey provided respondents with adequate time to consider their responses, thereby improving the reliability of the data.

While mail surveys suffer from the drawback of potentially low response rates, this factor was believed to be more than offset by the advantages already identified. Questionnaires were sent using DPR envelopes with replies going directly to the College of Business Administration at California State University, Sacramento (CSUS), an approach that provided greater assurance that the envelopes would be opened and questionnaires completed and returned.

Questionnaire Design

The questionnaire consisted of 24 questions, some of which contained multiple parts. Questions generally focused on the issues identified in the INTRODUCTION section of this Summary Report. The questionnaire was developed jointly by the consultant and DPR, and approved by DPR before being used. A copy of it is contained in Appendix B.

Included with the questionnaire was a self-addressed, postage-paid business reply envelope. These were addressed such that they would be returned directly to the College of Business Administration at CSUS. Respondents were given approximately one month to respond.

Caveats

The results of any research should be used with caution and at the reader's own discretion. Every study, no matter how well constructed, contains the possibility of some degree of error. Accordingly, the reader assumes sole responsibility for the use of this information.

Findings of the Study

Of the 1,003 questionnaires mailed, three were returned with incorrect or otherwise no longer valid addresses. This reduced the effective mailing to 1,000 school districts.

By the closure date for receiving responses, a total of 394 completed questionnaires were returned. This resulted in a 39.4% response rate on the effective mailout. (For mailed surveys, a 25.0% response rate is considered very good.)

The accuracy level of the study was evaluated based on this number of responses. Standard deviations for most questions were computed, and the highest one was found to be 0.18 for question 3.13. Using this statistic, the allowable error was computed to be within ± 5.00%. Therefore, it is reasonable to expect the findings presented in this section to be accurate, subject to the Caveats noted earlier.

The findings of the study are presented in sections: Pest Management Records and Inquiries, Perceived Seriousness of Pest Problems, Treatment Processes for Ants, Treatment Processes for Weeds, Use of Pest Control Businesses, Satisfaction with Current Pest Management Practices, and Perceived Value of Resources and Desired Method of Communication. Detailed data from the survey are presented in the tables located at the end of this Summary Report.

Pest Management Records and Inquiries

Presented in Table One are responses to questions concerning how school districts keep records, whether they have approved lists of pesticides, and how frequently they receive inquiries from the community.

As shown, while most districts (79.2%) keep records when pest treatments are used, 20.8% do not. Only 15.5% keep records when pests are sighted, and 11.2% keep records of pest monitoring.

Most districts (59.8%) have an approved list of pesticides. However, 40.2% do not maintain such a list.

Finally, the great majority of districts (90.6%) indicated they receive inquiries less than once per month. Very few districts (2.9%) received one or more inquiries per week.

Perceived Seriousness of Pest Problems

The perceived seriousness of selected pest problems is presented in Table Two. The list of pests included in this survey were provided by DPR.

The percentages of respondents who considered the pests to be “serious” or “very serious” problems are summarized below. Additionally, for ease of review, mean scores were computed for each pest. Scores were weighted using “5” to represent a “Very serious” response, and “1” to represent a “Not at all serious” response.

	Very Serious/ Serious	Mean Score
3.11 How Serious a Problem Are Weeds	65.2%	3.46
3.10 How Serious a Problem Are Gophers	56.2%	3.19
3.2 How Serious a Problem Are Ants	47.2%	2.93
3.4 How Serious a Problem Are Yellowjackets/Bees	46.2%	2.93
3.13 How Serious a Problem Are Other Pests	43.7%	2.72
3.9 How Serious a Problem Are Mice/Rats	31.9%	2.59
3.5 How Serious a Problem Are Termites/Structural Pests	26.2%	2.42
3.3 How Serious a Problem Are Cockroaches	23.4%	2.19
3.6 How Serious a Problem Are Spiders	22.2%	2.35
3.7 How Serious a Problem Are Flies/Gnats/Midges	12.4%	1.99
3.8 How Serious a Problem Are Mosquitoes	10.9%	1.86
3.12 How Serious a Problem Are Pests/Diseases of Landscape Plants	10.7%	2.00
3.1 How Serious a Problem Are Fire Ants	4.9%	1.48

As shown, the majority of districts consider weeds and gophers to be very or somewhat serious problems (65.2% and 56.2% respectively). Furthermore, nearly half consider ants and yellowjackets/bees to be serious problems (47.2% and 46.2% respectively). Relatively few respondents consider flies/gnats/midges, mosquitoes, diseases of landscape plants, and fire ants to be serious problems (12.4%, 10.9%, 10.7%, and 4.9%, respectively).

Treatment Activities for Ants

Presented in Table Three are district responses regarding their experiences with ants. As shown, the great majority of respondents (75.0%) indicated they treated for ants within the last two years.

The single largest group of districts (40.8%) treats for ants when first noticed, and 29.8% do so when a certain number (unspecified) of complaints are received. Another 16.4% of the districts treat for ants at set intervals.

The methods most commonly used to treat for ants are ant baits (37.1%) and aerosol insecticide sprays (32.2%). To a lesser extent, districts use broadcast insecticide spray (20.6%), caulking cracks to prevent entry (19.0%), and/or soapy water spray (13.5%). The single largest group of respondents (32.3%) indicated that the one method they prefer to use is ant baits, and another 22.8% prefer aerosol insecticide sprays.

The districts reported that the people most likely to administer ant control treatment are outside contractors (47.8%) and custodians (39.1%). Relatively few district staff (11.6%) and teachers (1.4%) are likely to do so.

Finally, the majority of respondents (58.1%) consider their pest management methods for ants to be somewhat effective, and another 27.5% believe them to be very effective. Accordingly, 85.6% of the districts consider their current methods to be effective or very effective.

Treatment Activities for Weeds

Presented in Table Four are district responses regarding their experiences with weeds. As shown, nearly all of the respondents (91.1%) indicated they treated for weeds within the last two years. The most common areas in which they treated for weeds are fence rows (33.1%), athletic fields/playgrounds (32.2%), and landscaping (23.2%).

The two largest groups of districts (33.9%) treat for weeds when they exceed pre-established thresholds, and at regular intervals (29.1%). Another 27.5% of the districts treat for weeds when they are first noticed.

The majority of districts (62.4%) spot treat with herbicides, and/or use physical controls (55.6%) such as hand pulling/cultivating/mowing. To a lesser extent, districts use broadcast treatment with herbicides (27.2%) and/or mulches (23.1%). The single largest group of respondents (42.9%) indicated that the one method they prefer to use is spot treatment with herbicides. Another 23.9% use broadcast treatment with herbicides.

Finally, the majority of respondents (54.3%) consider their pest management methods for weeds to be somewhat effective, and another 35.3% believe them to be very effective. Accordingly, 89.6% of the districts consider their current methods to be effective or very effective.

Use of Pest Control Businesses

Presented in Table Five are responses to questions concerning district use of pest control businesses. As shown, the great majority of districts (79.6%) use Pest Control Operators (PCOs) on some contractual basis.

With respect to how districts contract for PCO services, the single largest group (31.6%) use district contracts for all pest management, and another 30.4% contract on an as-needed basis. To a lesser extent (26.5%), districts contract with PCOs for particular pests. Relatively few districts (7.7%) have schools contract directly with PCOs.

Satisfaction With Current Pest Management Practices

District satisfaction with their current pest management policies and practices is shown in Table Six.

The single largest group of districts (47.1%) indicated they consider their current pest management policies and practices to be very effective, and another 44.2% thought they are somewhat effective. Accordingly, 91.3% believe their current programs are very or somewhat effective.

Half of the districts (50.0%) are somewhat satisfied with their current pest management policies and practices, and another 39.7% are very satisfied. Overall, 89.7% of the districts are somewhat or very satisfied with their current programs.

Perceived Value of Resources and Desired Method of Communication

Districts were asked how useful they consider various possible resource available from DPR to be in improving their pest management systems, and how they would like to communicate with DPR. Their responses are presented in Table Seven.

The percentage of respondents who consider the resources to be "useful" or "very useful" are summarized below. Additionally, for ease of review, mean scores were computed for each pest. Scores were weighted using "5" to represent a "Very useful" response, and "1" to represent a "Not at all useful" response.

	Very Useful/ Useful	Mean Score
21.5 How Useful Would Information On Preventing Pest Problems Be	94.3%	4.57
21.6 How Useful Would Least-Toxic Pest Management Practices Be	92.7%	4.58
21.2 How Useful Would Information On Pest Mgmt. Practices At Other Schools Be	90.4%	4.45
21.9 How Useful Would Lists Of Products/Tools For Least-Toxic Pest Management Programs Be	89.6%	4.54
21.4 How Useful Would Information On Identifying Pest Problems Be	85.1%	4.25
21.7 How Useful Would Pesticide Safety Training Be	83.7%	4.28
21.3 How Useful Would Information On Health and Safety Risks From Pests Be	82.0%	4.20
21.1 How Useful Would Information On Health Effects of Pesticides Be	80.9%	4.16
21.8 How Useful Would Print/Video/Computer-Based Modules On Specific Pest Mgmt. Topics Be	80.2%	4.21

As shown, the great majority of districts view all of the resources included in this survey as very or somewhat useful. The resources receiving the greatest number of such ratings are information on preventing pest problems (94.3%), information on least-toxic pest management practices (92.7%), information on pest management practices at other schools (90.4%), and lists of products/tools for least-toxic pest management programs (89.6%).

When districts were asked to identify up to two resources that they consider to be the most useful, the most frequent responses were information on pest management practices at other schools (32.2%), lists of products/tools for least-toxic pest management programs (32.2%), information on least-toxic pest management practices (29.7%), and information on preventing pest problems (24.9%).

Finally districts were asked what method would be most convenient for communicating with them. The majority (58.0%) indicated printed material sent through the mail, and another 29.0% prefer e-mail.

Summary and Conclusions

Based on these findings, a number of conclusions appear to be warranted. These are provided below in list form for emphasis.

- Most districts keep records of pest treatments they use. However, the great majority do not keep records of pest sightings, and even fewer keep records of the results of pest monitoring. This appears to be an area in which convenient recordkeeping systems would be beneficial. While districts do not appear to receive many inquiries from the community concerning pest issues, they may need to be prepared for them in the future.

- While the majority of districts have lists of approved pesticides, a large percentage (40.2%) do not. Having such a list would seem to be essential to ensuring that proper and least-toxic treatments are used to manage pests.

- Generally, districts consider weeds and gophers, and to a lesser extent, ants and yellowjackets/bees, to pose the most serious pest problems. However, there were differences among districts as to which pests posed the most serious problems for them. Accordingly, while DPR may give special emphasis in its resource materials to the pests identified above, it may need to provide resources for managing all pests included in this study. Furthermore, while some pests were considered to pose less serious problems, this does not imply that districts have no problems with them. It may be that respondents simply do not feel that these are serious matters.

- The great majority of districts have treated for ants within the last two years. Treatment tends to occur when ants are first noticed, and the most common and preferred control mechanisms are ant baits and aerosol insecticide sprays. Treatments are typically administered by outside contractors, and to a lesser extent by custodians. Generally, districts consider their current ant control methods to be somewhat or very effective. This may explain why they do not consider ants to be an especially serious pest problem. Nevertheless, because so many districts treat for ants, DPR should provide resources for controlling this pest.

- Nearly all of the districts have treated for weeds within the last two years. The most common areas for weeds are fence rows, athletic fields/playgrounds, and landscaping. Districts are divided as to when they treat for weeds. Some do so when weeds exceed some pre-established threshold, at regular intervals, or when first noticed. The most frequently used methods for treating for weeds are spot treatment with herbicides and physical controls (e.g., hand pulling, cultivating, mowing). The preferred method seems to be spot treatment with herbicides, and to a much lesser extent, broadcast treatment with herbicides. Generally, districts consider their current weed control methods to be somewhat or very effective. The fact that the vast majority of districts experience weed control problems may explain why they consider weeds to be a serious pest problem even though they are satisfied with their current treatment methods. Because so many districts do treat for weeds, and consider it a serious problem, DPR should provide resources for controlling this pest.

- Most districts hire outside pest control businesses. Contract arrangements vary considerably, with the most common being to contract for all pest management or on an as-needed basis. Since districts do contract for these services, DPR should include resources for working effectively with PCOs.

- Most districts consider their current pest management policies and practices to be very to somewhat effective, and are somewhat or very satisfied with them. Accordingly, if DPR is to be successful with encouraging school districts to adopt an IPM program, it will need to demonstrate how the program will enhance or improve upon current practices.

- All of the resources DPR plans to make available to districts to improve their current pest management systems are considered very to somewhat useful. DPR may want to focus its attention first on those that received the highest ratings: information on preventing pest problems, information on least-toxic pest management practices, information on pest management practices at other schools, and lists of products/tools for least-toxic pest management programs.

Overall, it appears that districts believe they have somewhat to very serious problems with several pests. While they generally consider their current pest management policies and practices effective, and are satisfied with them, the districts seem to be receptive to the technical resources DPR is considering developing for them.

TABLE ONE
PEST MANAGEMENT RECORDS AND INQUIRIES

	Number	Percent
1. How District Keeps Records		
Of pest treatments used	312	79.2%
Of pest sightings	61	15.5%
Of results of pest monitoring	44	11.2%
Total*	394	
16. District Has Approved List of Pesticides		
Yes	229	59.8%
No	154	40.2%
Total	383	100.0%
2. How Frequently Receive Inquiries From Community		
Less than monthly	346	90.6%
Monthly	25	6.5%
Weekly	9	2.4%
Daily	2	0.5%
Total	382	100.0%

*Percent based on total number of respondents because multiple responses were possible.

TABLE TWO
PERCEIVED SERIOUSNESS OF PEST PROBLEMS

	Number	Percent
3.1 How Serious a Problem Are Fire Ants		
Very serious	4	1.1%
Somewhat serious	14	3.8%
Uncertain	28	7.6%
Not very serious	61	16.6%
Not at all serious	260	70.8%
Total	367	100.0%
Mean score*	1.48	
3.2 How Serious a Problem Are Ants		
Very serious	17	4.4%
Somewhat serious	166	42.8%
Uncertain	19	4.9%
Not very serious	146	37.6%
Not at all serious	40	10.3%
Total	388	100.0%
Mean score*	2.93	
3.3 How Serious a Problem Are Cockroaches		
Very serious	12	3.1%
Somewhat serious	77	20.2%
Uncertain	18	4.7%
Not very serious	138	36.2%
Not at all serious	136	35.7%
Total	381	100.0%
Mean score*	2.19	
3.4 How Serious a Problem Are Yellowjackets/Bees		
Very serious	27	7.0%
Somewhat serious	151	39.2%
Uncertain	25	6.5%
Not very serious	133	34.5%
Not at all serious	49	12.7%
Total	385	100.0%
Mean score*	2.93	

	Number	Percent
3.5 How Serious a Problem Are Termites/Structural Pests		
Very serious	16	4.2%
Somewhat serious	83	22.0%
Uncertain	44	11.6%
Not very serious	134	35.4%
Not at all serious	101	26.7%
Total	378	100.0%
Mean score*	2.42	
3.6 How Serious a Problem Are Spiders		
Very serious	10	2.6%
Somewhat serious	75	19.6%
Uncertain	38	9.9%
Not very serious	177	46.2%
Not at all serious	83	21.7%
Total	383	100.0%
Mean score*	2.35	
3.7 How Serious a Problem Are Flies/Gnats/Midges		
Very serious	9	2.4%
Somewhat serious	38	10.1%
Uncertain	28	7.4%
Not very serious	169	44.7%
Not at all serious	134	35.4%
Total	378	100.0%
Mean score*	1.99	
3.8 How Serious a Problem Are Mosquitoes		
Very serious	10	2.7%
Somewhat serious	31	8.3%
Uncertain	26	6.9%
Not very serious	137	36.5%
Not at all serious	171	45.6%
Total	375	100.0%
Mean score*	1.86	
3.9 How Serious a Problem Are Mice/Rats		
Very serious	14	3.7%
Somewhat serious	108	28.2%
Uncertain	34	8.9%
Not very serious	160	41.8%
Not at all serious	67	17.5%
Total	383	100.0%
Mean score*	2.59	

	Number	Percent
3.10 How Serious a Problem Are Gophers		
Very serious	54	14.2%
Somewhat serious	160	42.0%
Uncertain	20	5.2%
Not very serious	99	26.0%
Not at all serious	48	12.6%
Total	381	100.0%
Mean score*	3.19	
3.11 How Serious a Problem Are Weeds		
Very serious	63	16.4%
Somewhat serious	188	48.8%
Uncertain	22	5.7%
Not very serious	86	22.3%
Not at all serious	26	6.8%
Total	385	100.0%
Mean score*	3.46	
3.12 How Serious a Problem Are Pests/Diseases of Landscape Plants		
Very serious	5	1.3%
Somewhat serious	35	9.4%
Uncertain	43	11.5%
Not very serious	162	43.3%
Not at all serious	129	34.5%
Total	374	100.0%
Mean score*	2.00	
3.13 How Serious a Problem Are Other Pests		
Very serious	10	14.1%
Somewhat serious	21	29.6%
Uncertain	2	2.8%
Not very serious	15	21.1%
Not at all serious	23	32.4%
Total	71	100.0%
Mean score*	2.72	

*Mean score based on scaling: 5 = Very serious, 1 = Not at all serious.

TABLE THREE
TREATMENT ACTIVITIES FOR ANTS

	Number	Percent
4. Treated for Ants in Last Two Years		
Yes	294	75.0%
No	98	25.0%
Total	392	100.0%
5. How Decide to Treat for Ants		
When ants are first noticed	119	40.8%
When certain number of complaints received	87	29.8%
At regular intervals	48	16.4%
When ants exceed pre-established threshold	29	9.9%
Other	9	3.1%
Total	292	100.0%
6. How Typically Control for Ants		
Ant baits	146	37.1%
Aerosol insecticide spray	127	32.2%
Broadcast insecticide spray	81	20.6%
Caulk in cracks to prevent entry	75	19.0%
Soapy water spray	53	13.5%
Other	52	13.2%
Total*	394	
7. Which One Method Prefer for Controlling Ants		
Ant baits	82	32.3%
Aerosol insecticide spray	58	22.8%
Broadcast insecticide spray	45	17.7%
Soapy water spray	30	11.8%
Caulk in cracks to prevent entry	11	4.3%
Other	28	11.0%
Total	254	100.0%

	Number	Percent
8. Who Most Likely to Administer Treatment to Control Ants		
Outside contractor	132	47.8%
Custodians	108	39.1%
District staff	32	11.6%
Teachers	4	1.4%
Other	16	5.8%
Total	276	100.0%
9. How Effective Consider Pest Control Methods to Be for Ants		
Very effective	80	27.5%
Somewhat effective	169	58.1%
Uncertain	19	6.5%
Somewhat ineffective	21	7.2%
Very ineffective	2	0.7%
Total	291	100.0%
Mean score**	4.04	

*Percent based on total number of respondents because multiple responses were possible.
*Mean score based on scaling: 5 = Very effective, 1 = Very ineffective.

TABLE FOUR
TREATMENT ACTIVITIES FOR WEEDS

	Number	Percent
10. Treated for Weeds in Last Two Years		
Yes	359	91.1%
No	35	8.9%
Total	394	100.0%
11. Where Have Most Trouble with Weeds		
Fence rows	118	33.1%
Athletic fields/playgrounds	115	32.2%
Landscaping	83	23.2%
Rights of way	25	7.0%
Other	16	4.5%
Total	357	100.0%
12. How Decide to Treat for Weeds		
When weeds exceed pre-established threshold	121	33.9%
At regular intervals	104	29.1%
When weeds are first noticed	98	27.5%
When certain number of complaints received	13	3.6%
Other	21	5.9%
Total	357	100.0%
13. How Typically Control for Weeds		
Spot treatment with herbicides	246	62.4%
Physical controls (hand pulling, cultivating, mowing)	219	55.6%
Broadcast treatment with herbicides	107	27.2%
Mulches	91	23.1%
Flaming	29	7.4%
Other	34	8.6%
Total*	394	
14. Which One Method Prefer for Controlling Weeds		
Spot treatment with herbicides	142	42.9%
Broadcast treatment with herbicides	79	23.9%
Physical controls (hand pulling, cultivating, mowing)	57	17.2%
Mulches	30	9.1%
Flaming	7	2.1%
Other	16	4.8%
Total	331	100.0%

	Number	Percent
15. How Effective Consider Pest Control Methods to Be for Weeds		
Very effective	126	35.3%
Somewhat effective	194	54.3%
Uncertain	12	3.4%
Somewhat ineffective	23	6.4%
Very ineffective	2	0.6%
Total	357	100.0%
Mean score**	4.17	

*Percent based on total number of respondents because multiple responses were possible.
*Mean score based on scaling: 5 = Very effective, 1 = Very ineffective.

TABLE FIVE
USE OF PEST CONTROL BUSINESSES

	Number	Percent
17. Does District Hire Outside Pest Control Business(s)		
Yes	313	79.6%
No	80	20.4%
Total	393	100.0%
18. How District Contracts with Pest Control Businesses		
District contracts for all pest management	99	31.6%
Contract on an as-needed basis	95	30.4%
District contracts for particular pests	83	26.5%
By each school	24	7.7%
Other	12	3.8%
Total	313	100.0%

TABLE SIX
SATISFACTION WITH CURRENT PEST MANAGEMENT PRACTICES

	Number	Percent
19.How Effective Consider Current Pest Management Policies and Practices to Be		
Very effective	184	47.1%
Somewhat effective	173	44.2%
Uncertain	17	4.3%
Somewhat ineffective	16	4.1%
Very ineffective	1	0.3%
Total	391	100.0%
Mean score*	4.34	
20. How Satisfied with Current Pest Management Policies and Practices		
Very satisfied	155	39.7%
Somewhat satisfied	195	50.0%
Uncertain	25	6.4%
Somewhat dissatisfied	13	3.3%
Very dissatisfied	2	0.5%
Total	390	100.0%
Mean score**	4.25	

*Mean score based on scaling: 5 = Very effective, 1 = Very ineffective.
**Mean score based on scaling: 5 = Very satisfied, 1 = Very dissatisfied.

TABLE SEVEN
PERCEIVED VALUE OF RESOURCES AND DESIRED METHOD OF COMMUNICATION

	Number	Percent
21.1 How Useful Would Info. on Health Effects of Pesticides Be		
Very useful	171	44.8%
Somewhat useful	138	36.1%
Uncertain	41	10.7%
Not very useful	27	7.1%
Not at all useful	5	1.3%
Total	382	100.0%
Mean score*	4.16	
21.2 How Useful Would Info. on Pest Mgmt. Practices at Other Schools Be		
Very useful	225	58.3%
Somewhat useful	124	32.1%
Uncertain	24	6.2%
Not very useful	11	2.8%
Not at all useful	2	0.5%
Total	386	100.0%
Mean score*	4.45	
21.3 How Useful Would Info. on Health and Safety Risks from Pests Be		
Very useful	180	47.6%
Somewhat useful	130	34.4%
Uncertain	38	10.1%
Not very useful	25	6.6%
Not at all useful	5	1.3%
Total	378	100.0%
Mean score*	4.20	

	Number	Percent
21.4 How Useful Would Info. on Identifying Pest Problems Be		
Very useful	178	48.1%
Somewhat useful	137	37.0%
Uncertain	29	7.8%
Not very useful	21	5.7%
Not at all useful	5	1.4%
Total	370	100.0%
Mean score*	4.25	
21.5 How Useful Would Info on Preventing Pest Problems Be		
Very useful	250	65.3%
Somewhat useful	111	29.0%
Uncertain	13	3.4%
Not very useful	7	1.8%
Not at all useful	2	0.5%
Total	383	100.0%
Mean score*	4.57	
21.6 How Useful Would Least-Toxic Pest Management Practices Be		
Very useful	264	68.8%
Somewhat useful	92	24.0%
Uncertain	16	4.2%
Not very useful	9	2.3%
Not at all useful	3	0.8%
Total	384	100.0%
Mean score*	4.58	
21.7 How Useful Would Pesticide Safety Training Be		
Very useful	204	54.4%
Somewhat useful	110	29.3%
Uncertain	32	8.5%
Not very useful	21	5.6%
Not at all useful	8	2.1%
Total	375	100.0%
Mean score*	4.28	

	Number	Percent
21.8 How Useful Would Print, Video or Computer-Based Course Modules on Specific Pest Mgmt. Topics Be		
Very useful	190	50.1%
Somewhat useful	114	30.1%
Uncertain	46	12.1%
Not very useful	21	5.5%
Not at all useful	8	2.1%
Total	379	100.0%
Mean score*	4.21	
21.9 How Useful Would Lists of Products/Tools for Least-Toxic Pest Management Programs Be		
Very useful	261	67.8%
Somewhat useful	84	21.8%
Uncertain	31	8.1%
Not very useful	4	1.0%
Not at all useful	5	1.3%
Total	385	100.0%
Mean score*	4.54	
22. Which Two Resources Would Be Most Useful		
Information On Pest Mgmt. Practices At Other Schools Be	127	32.2%
Lists Of Pdts/Tools For Least-Toxic Pest Mgmt. Programs Be	127	32.2%
Information On Least-Toxic Pest Management Practices Be	117	29.7%
Information On Preventing Pest Problems Be	98	24.9%
Print/Video/Computer Courses On Pest Mgmt. Topics Be	66	16.8%
Information On Health Effects Of Pesticides Be	50	12.7%
Information On Identifying Pest Problems Be	30	7.6%
Information On Health And Safety Risk From Pests Be	23	5.8%
Pesticide Safety Training Be	17	4.3%
Total**	394	
23. What Method of Communication Is Most Convenient		
Printed through the mail	224	58.0%
E-Mail	112	29.0%
Fax	45	11.7%
Other	5	1.3%
Total	386	100.0%

*Mean score based on scaling: 5 = Very useful, 1 = Not at all useful.
**Percent based on total number of respondents because multiple responses were possible.

APPENDIX

QUESTIONNAIRE USED FOR THE SURVEY

March 8, 2001

Dear IPM Coordinator:

In response to the Healthy Schools Act (AB 2260), we are conducting this survey of all school districts within California. The purposes are to obtain information on various aspects of district pest management policies and practices, and to identify resources you may need for your pest management activities. **The information we obtain from this survey will assist us in developing materials that will help your school district comply with the law and help you improve your district's pest management practices.**

Please take a few minutes to complete this questionnaire and return it in the enclosed self-addressed, postage-paid envelope to California State University, Sacramento, where the results will be tabulated. You need not identify yourself, and all individual responses will remain confidential.

Thank you for your assistance. We would appreciate your responding by **April 9, 2001**.

Sincerely,

Paul E. Helliker
Director

BASELINE SURVEY OF SCHOOL DISTRICTS

1. Which of the following best describes how your school district keeps records on pest management treatment? *Please check all that apply.*

- **1)** p Records are maintained of pest sightings
- **2)** p Records are kept of results of pest monitoring
- **3)** p Records are kept of pest treatments used

2. Which **one** of the following best describes how frequently your district receives inquiries from the community concerning pest management issues?

- **1)** p Daily
- **2)** p Weekly
- **3)** p Monthly
- **4)** p Less than once per month

3. Overall, how serious a problem does your district have with **each** of the following pests?

	Very Serious	Some-what Serious	Un-certain	Not Very Serious	Not at All Serious
1) Fire ants	____	____	____	____	____
2) Ants	____	____	____	____	____
3) Cockroaches	____	____	____	____	____
4) Yellowjackets/bees	____	____	____	____	____
5) Termites/structural pests	____	____	____	____	____
6) Spiders	____	____	____	____	____
7) Flies/gnats/midges	____	____	____	____	____
8) Mosquitoes	____	____	____	____	____
9) Mice or rats	____	____	____	____	____
10) Gophers	____	____	____	____	____
11) Weeds	____	____	____	____	____
12) Pests/diseases of landscape plants	____	____	____	____	____
13) Other (specify) _____	____	____	____	____	____

*Questions **4** through **9** concern **ANTS***

4. Within the last two years, has your district treated for **ants** inside school buildings?
- **1)** YES p (➔ Please go to Question **5**)
- **2)** NO p (➔ Please go to Question **10**)

5. Which **one** of the following best describes how you normally decide that treatment for ants inside school buildings is necessary?
- **1)** p Treatment undertaken at regular time intervals (for example, weekly or monthly)
- **2)** p Treatment when ants are first noticed
- **3)** p Treatment when number of ants exceed a pre-established threshold
- **4)** p Treatment when have a certain number of complaints from staff, teachers, students, or parents
- **5)** p Other (please specify) _____

6. Which pest management method(s) do you typically use to control ants in buildings? *Please check all that you typically use.*
- **1)** p Broadcast insecticide spray applied along ant trail or as a barrier
- **2)** p Aerosol insecticide spray applied along ant trail or as a barrier
- **3)** p Ant baits
- **4)** p Soapy water spray
- **5)** p Using caulk in cracks to prevent entry of ants
- **6)** p Other (please specify) _____

7. Which **one** of the above methods do you prefer to use for ants in school buildings? *Please indicate the number of the line from Question **6**.* _____

8. Which **one** of the following is most likely to administer treatment(s) to control ants in school buildings?
- **1)** p Custodians
- **2)** p Teachers
- **3)** p District staff
- **4)** p Outside contractor (such as a pest control operator)
- **5)** p Other (please specify) _____

9. Overall, how effective do you consider your pest control methods to be for ants in school buildings?
- **1)** p Very effective
- **2)** p Somewhat effective
- **3)** p Uncertain
- **4)** p Somewhat ineffective
- **5)** p Very ineffective

*Questions **10** through **15** concern **WEEDS**:*

10. Within the last two years, has your district treated for weeds?
- **1)** YES p (➔ Please go to Question **11**)
- **2)** NO p (➔ Please go to Question **16**)

11. At which **one** of the following locations do you typically have the **most** trouble with weeds?
- **1)** p Athletic fields/playgrounds
- **2)** p Landscaping
- **3)** p Rights of way
- **4)** p Fence rows
- **5)** p Other (please specify) _____

12. Which **one** of the following best describes how you decide that treatment is necessary?
- **1)** p Treatment undertaken at regular time intervals (such as monthly)
- **2)** p Treatment when weeds are first noticed
- **3)** p Treatment when weed abundance exceeds a pre-established threshold
- **4)** p Treatment when have a certain number of complaints from staff, teachers, students, or parents
- **5)** p Other (please specify) _____

13. Which pest management method(s) do you typically use to control weeds? *Please check all that you typically use.*
- **1)** p Regular broadcast treatment of turf and/or landscaping with herbicides
- **2)** p Regular spot treatment of turf and/or landscaping with herbicides
- **3)** p Use of mulches
- **4)** p Physical controls—hand pulling, cultivating, mowing
- **5)** p Flaming
- **6)** p Other (please specify) _____

14. Which **one** of the methods above do you prefer to use for these weeds? *Please indicate the number of the line from Question **13**.* _____

15. Overall, how effective do you consider your weed control methods to be?
- **1)** p Very effective
- **2)** p Somewhat effective
- **3)** p Uncertain
- **4)** p Somewhat ineffective
- **5)** p Very ineffective

16. Does your school district have an approved list of pesticides for pest control on school property?
- **1)** p Yes
- **2)** p No

17. Does your district hire outside pest control operators (or PCOs)?
- **1)** YES p (➔ Please go to Question **18**)
- **2)** NO p (➔ Please go to Question **19**)

18. Which **one** of the following best describes how your district contracts with outside PCOs?

1) p Contracting is done by each school within the district
2) p The district contracts with PCOs for all pest management districtwide
3) p The district contracts with PCOs for pest management of particular pests districtwide
4) p PCOs are hired on an as-needed basis districtwide
5) p Other (please specify) _____

19. Overall, how effective do you consider your current pest management policies and practices to be in managing pest problems in a safe manner?

1) p Very effective
2) p Somewhat effective
3) p Uncertain
4) p Somewhat ineffective
5) p Very ineffective

20. Overall, how satisfied are you with your current pest management policies and practices?

1) p Very satisfied
2) p Somewhat satisfied
3) p Uncertain
4) p Somewhat dissatisfied
5) p Very dissatisfied

21. How useful to you would **each** of the following resources be in reducing pesticide use and improving your pest management system?

		Very useful	**Some-what useful**	**Un-certain**	**Not very useful**	**Not at all useful**
1)	Information on health effects of pesticides.	____	____	____	____	____
2)	Information on pest management practices used at other schools.	____	____	____	____	____
3)	Information on health and safety risks from pests.	____	____	____	____	____
4)	Information on identifying pest problems.	____	____	____	____	____
5)	Information on preventing pest problems.	____	____	____	____	____
6)	Least-toxic pest management practices.	____	____	____	____	____
7)	Pesticide safety training.	____	____	____	____	____
8)	Print, video or computer-based course modules on specific pest management topics.	____	____	____	____	____
9)	Lists of products and tools compatible with least-toxic pest management programs.	____	____	____	____	____

22. Which **two** of the resources above would you find most useful? *Please identify by **circling** the numbers of the resource from Question **21**.*

23. What one method would be most convenient for communicating with you?

1) p Printed material through the mail
2) p E-mail
3) p Fax
4) p Other_____

24. Do you have any other comments or suggestions? _____

_____

_____

_____

This completes the survey. Thank you for your cooperation. Please return your completed questionnaire in the postage-paid envelope by April 9, 2001.